10 April 1961

MEMORANDUM FOR: Chairman, Technical Development Board

THROUGH: Secretary, Technical Development Board

SUBJECT: Staff Study on Need for Instruction Manual on Field Procedures and Exploitation of Ground Photography

1. INTRODUCTION

CIA/PIC has a requirement, on a continuous basis, from [redacted] 25X1A

25X1A [redacted] for a series of lectures dealing with ground photography. Besides students, other selected groups have attended these lectures. Among the audience there has been personnel from DD/P/TSD, DD/P case officers and OCR/GR. The purpose of the lectures has been to convey to those responsible for the procurement of photography simple geometric concepts that, if applied, will result in photography that will permit photogrammetric analysis; that is, photography from which it is possible to determine dependable dimensions by measurement and mathematical reduction.

Response by those attending has been exceptionally enthusiastic. After each lecture the audience has unanimously indicated the desire for an instruction manual that could be distributed to the intelligence community. The desire for such a manual has prompted this Staff Study.

2. STATING THE PROBLEM

There is a need for an instruction manual on field procedures and exploitation of photography intended for personnel who are engaged in the collection of ground photography for intelligence purposes.

3. ASSUMPTIONS

The need for a manual is based on the following assumptions:

a. That there are no adequate manuals to guide personnel assigned to missions involving photography. (See Enclosures A and B.)

b. That unless people are informed of their errors they will continue to make the same mistakes.

c. That the collection effort will continue regardless of proper understanding.

d. That persons in the collection business are not aware that the results of their effort may be useless or nearly so.

e. That some photography in the field requires immediate analysis for dimensions.

4. PRESENTATION OF FACTS

a. People engaged in collection activities are not cognizant of the methods by which they could improve the value of their photography.

b. Present collection techniques have been unsatisfactory from the viewpoint of the photogrammetrist and photo interpreter.

c. All people responsible for collection photography cannot be informed via the lecture circuit.

d. OTR, OCR/GR and the DD/P area are interested and have encouraged the publication of a comprehensive instruction manual for their guidance and distribution.

e. Operational personnel in the field are frequently required to do immediate photo measurement and analysis of photography and they do not know how to approach their problems.

f. A proposal to generate one such manual was forwarded to OTR from PIC and was returned because OTR considered the proposal as falling within PIC purview.

5. DISCUSSION OF THE FACTS

a. Individuals engaged in collecting ground photography are not aware that there are simple methods of enhancing the value of their exposures. They are not aware that their camera is a precision angle measuring device much like a surveyor's transit. If they were cognizant of this fact they could be guided into considering such factors as the vantage point of exposure station and that there is value in panoramic or multiple exposures. They do not realize that photography from two exposure stations is infinitely more valuable than an ill-considered single exposure. Also, they do not appreciate the uses that can be made of imaged convergent lines in space, nor the necessity of obtaining and recording data independent to the camera data and many others.

b. The analyst receives unsatisfactory photography in the sense that he has no camera data, i.e., there is no known focal length, cropped paper prints are delivered, and normally each print is enlarged by an unknown amount. With such photography, many times there is no solution and when a solution is possible, it is only by accident, i.e., the print did have some analyzable geometry.

c. Individuals who attend lectures on the subject of ground photography are usually a small cross section of the total number of people engaged in the activity. Even those who do attend tend to forget, with the passage of time, the pertinent guiding principles given to them during a lecture period.

d. There are instances when photography taken in the field requires immediate analysis, i.e., the time element is sufficiently critical to preclude sending the film to a processing center. Under these circumstances, the individual required to do the analysis must be guided in the application of simple techniques that will enable satisfactory dimensioning.

6. CONCLUSIONS

It is concluded that a manual makes it possible to reach all persons who are responsible and/or actively engaged in the procurement of ground photography, e.g., CIA, State Department, military attaches, etc., and that the dissemination of the manual will benefit the entire intelligence community.

7. RECOMMENDATION

It is recommended that a contract be negotiated to prepare such a manual with STATINTL has submitted a proposal, though not totally satisfactory in its present form. It is being rewritten to reflect more directly our requirements as outlined in this study. STATINTL

Chief, TISD

Enclosures: A and B

STATINTL

STATINTL PIC/TISD/TIB:

ENCLOSURE A

Enclosures B are manuals that were published by the Navy and CIA. The CIA manual is a condensed extraction from the Navy manual and subsequently contains much less information. Discussion of the adequacy of these manuals will be confined to the Navy publication.

The Navy manual has the following shortcomings:

(1) In no case does it mention simple techniques on how to obtain metrical data from ground photography.

(2) It is extremely brief on geometric concepts of ground photography; i.e., the material in the manual concerned with the total geometric picture-taking concepts is inadequately expressed, or not mentioned at all.

(3) There is no mention of the ramifications resulting from different types of photographs; i.e., there is no supporting numerical data that enables the photographer to appreciate how his photograph can cause serious variations in the metrical analysis of the object.

(4) It is oriented for the Navy photo interpreter; i.e., the manual stresses techniques of photographing installations so as to permit determining the function of the installation. The manual is redundant with World War II Navy interests, such as beach gradients, types of beaches, docks, ships, etc.

STATINTL

If more details are required concerning the manuals contact Mr. [redacted]